

REMARKS

In the Office Action, the Examiner rejected claims 1 – 7 and 9 – 15. With this Amendment, Applicant has amended claims 1, 3, 8, 9, 11, and 16 and added claims 17 – 20. The application now includes claims 1 – 20.

Applicant hereby encloses a Credit Card Payment Form in the amount of \$ 100.00 for an extra independent claim over three.

CLAIM OBJECTIONS

In the Office Action, the Examiner objected to claims 3 and 11 due to various informalities. With this Amendment, Applicant has amended claims 3 and 11 in accordance with the Examiner's instructions. Therefore, it is respectfully requested that the objection to claims 3 and 11 be withdrawn and that claims 3 and 11 be held allowable.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1, 2, 4, 5, and 9 – 13 under 35 U.S.C. § 102(b) as being anticipated by the Burdick patent.

With this Amendment, Applicant has amended the present application to better define the invention. In particular, Applicant has amended claim 1 to claim positioning a variable frequency device outside the bore hole. In addition, Applicant has amended claim 9 to claim a variable frequency device positioned outside the bore hole.

The Burdick patent neither teaches nor suggests the method or system as now claimed in the present application. The Burdick patent merely describes an ultrasonic device to mitigate wax deposition on an oil pumping apparatus. The main stated purpose of the Burdick patent was to prolong the life of the oil well pumps. A secondary purpose was to mitigate wax deposition while the well is being pumped. A tertiary purpose was to settle sand from the oil while the well is being pumped. The Burdick patent also restricts his invention to electrical down hole pumps, not all types of pumps. To the contrary, the method and system of the present invention is not restricted to wells being pumped by electric down hole pumps. The present invention can be applied to all wells including, but not limited to, flowing wells, wells being gas lifted, wells being pumped by sucker rod pumps, ribbon pumps, jet pumps, etc.

In addition, the device of the Burdick patent provides a quite different manner of generating ultrasonic waves. The Burdick patent describes a mechanical device with the ultrasonic waves generated down hole by an electric current vibrating a rod elongating with each cycle of the alternating current. The rod is connected to a spring which then vibrates a diaphragm located down-hole which generates the ultrasonic waves. The Burdick patent's device is an integral part of the down hole electric pump and cannot work without the pump. Further, the Burdick patent states that the frequency of the waves is thus restricted to the frequency of the electric current thereby preventing the device from optimizing frequency. Generating three frequencies with his down hole mechanical device is not possible and he fails to specify any usable frequencies due to the inability to vary the frequency. The frequency is strictly restricted to the frequency of the electric current irrespective of the optimum frequency.

To the contrary, the method and system of the present invention generates the ultrasonic frequencies at the surface and transmits the frequencies to the ultrasonic transducers located down hole and attached to the outside or inside of the tubing. The ultrasonic waves are transmitted to the oil via the tubing, not a device that is part of an electric down hole pump. In addition, a range of generated frequencies are optimized *a priori* for reducing and breaking up the wax being precipitated so that the flow of oil is not restricted.

Therefore, since the Burdick patent neither teaches nor suggest the method or system of the present application, it is respectfully requested that the rejection of claims 1, 2, 4, 5, and 9 – 13 under 35 U.S.C. § 102(b) be withdrawn and that claims 1, 2, 4, 5, and 9 – 13 be held allowable.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 3, 6, 7, 14, and 15 under 35 U.S.C. § 103(a) as being unpatentable over the Burdick patent.

Claims 3, 6, 7, 14, and 15 depend from either claim 1 or claim 9. Applicant believes that claims 1 and 9 are allowable. Therefore, since the Burdick patent neither teaches nor suggest the method or system of the present application, it is respectfully requested that the rejection of claims 3, 6, 7, 14, and 15 under 35 U.S.C. § 103(a) be withdrawn and that claims 3, 6, 7, 14, and 15 be held allowable.

CONCLUSION

In conclusion, it is believed that the present application is in condition for consideration and allowance. Reconsideration and allowance of claims 1 – 20 are respectfully requested.

Respectfully submitted,

BRIAN F. TOWLER

By: 

Emery L. Tracy, Reg. No. 34,081

P.O. Box 1518

Boulder, Colorado 80306

Phone: (303) 443-1143 Fax: (303) 443-1415